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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KACKAR, RAM N

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,305

Applicant(s)

BADER ET AL.

Examiner

Ram N. Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-2 and 4-26 is/are pending in the application.
- 4a) Of the above claim(s) 4-13 and 20-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,14-19 and 23-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-2, 14-19, 23 and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over by Gurary et al (US 6001183).**

Gurary et al disclose a substrate holder which could be used in an epitaxial deposition having three dimensional structures for control of temperature at the surface of the susceptor by providing controlled thermal conductivity at different regions (Abstract, Fig 1-Fig 16). The stepped relief structure is disposed centrally especially at (Fig 16-113). The different structures could have smooth curved transition or stepped transition (Col 13 line 58- 62). The substrate could be mounted in a recess or on step in recess. The substrate could be edge supported as in Fig 16. The epitaxial deposition system as inherent and as disclosed used gases and discloses exhaust.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 14-19, 23 and 26 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Gurary et al (US 6001183) in view of Lie et al (US 6494955).

Gurary et al disclose a substrate holder which could be used in an epitaxial deposition having three dimensional structures for control of temperature at the surface of the susceptor by providing controlled thermal conductivity at different regions (Abstract, Fig 1-Fig 16). The different structures could have smooth curved transition or stepped transition (Col 13 line 58-62). The substrate could be mounted in a recess or on step in recess.

Gurary et al suggest stepped surface in place of a continuous curved surface. As explained below Lie et al show stepped surface more explicitly.

Lie et al show a temperature-controlling surface having distinct steps (Fig 2A) to provide variable gap for controlling heat conductivity (Col 3 line 54- Col 4 line35).

Therefore having steps for gap control for controlling thermal conductivity for temperature profile control would have been obvious for one of ordinary skill in the art at the time of invention.

5. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gurary et al (US 6001183) in view of Satoh (US 6063203).

Gurary et al disclose a substrate holder which could be used in an epitaxial deposition having three dimensional structures for control of temperature at the surface of the susceptor by providing controlled thermal conductivity at different regions (Abstract, Fig 1-Fig 16). The different structures could have smooth curved transition or stepped transition (Col 13 line 58-62). The substrate could be mounted in a recess or on step in recess.

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Gurary et al do not disclose surface roughness of the substrate holder.

However surface roughness of substrate holders are kept low for different reasons.

Sato teaches that lower surface roughness from 2-8 μ m helps in reducing frictional wear (Col 6 lines 45-55).

Therefore having surface roughness below 10 μ m would have been obvious for one of ordinary skill in the art at the time of invention.

Response to Arguments

Applicant's arguments filed 6/19/2006 have been fully considered but they are not persuasive.

Applicant argues that in Gurary the steps are disclosed on the side opposite to the substrate supporting face and not on the substrate supporting face.

This is not found persuasive since one of ordinary skill in the art would understand that the teaching "that a curved surface could be substituted by a stepped surface" could be applied in any orientation. Moreover a surface with large continuous steps as mentioned in the specification approaches a curved surface in a broad sense especially if the steps are small as mentioned in the specification.

Further in the following statement reproduced from the applicant's arguments, the applicant defines 'stepped relief' in the following way.

"Moreover, as shown in Figs. 8A and 8B of the published specification, the phrase 'stepped relief' recited in claim 1 denotes a configuration that includes a smaller structure (e.g., the small steps as shown in Fig. 8A) superposed upon a bigger structure

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(e.g., the "hill" in Fig. 8A). In contrast, the stepped surface 220 shown in Fig. 2A of Lei does not qualify as a "stepped relief" because it denotes a few relatively large steps, which are not superposed upon a bigger structure".

This definition of 'stepped relief' neither conforms to common way of speaking nor discussed in the specification. Therefore this argument is not persuasive. "stepped relief" could not be more specific as in Lei et al.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar

Primary Examiner AU 1763